

Zoonotic Diseases Are Rare, but Can Be Deadly; Public Education Is Essential to Prevention

Sporadic cases of often fatal hantavirus pulmonary syndrome (HPS) and the first human rabies cases in Washington in more than 50 years have generated significant media coverage and public concern. The detection of HPS, an emerging disease transmitted from rodents to humans, and the 1995 and 1997 human rabies cases resulting from exposure to bats, have reemphasized the role of public health agencies in zoonotic disease prevention.

Compounding the challenge are the increasing number of exotic animal species (iguanas, snakes, prairie dogs, hedgehogs) sold and kept as pets, and the evaluation of their role in zoonotic disease transmission. Pet birds may transmit psittacosis, and several cases of this disease also occurred in Washington in 1995.

Although most zoonotic diseases are rare, clinicians should be familiar with symptoms of psittacosis, HPS, and rabies, as well as salmonellosis. Suspected cases or their close contacts should be questioned about exposure to pets, livestock, or wild or exotic animals. All suspected cases should be immediately reported to the local health department for investigation. The table on page 2 presents suggestions for reducing risk of zoonotic diseases.

Hantavirus

Eleven cases of HPS have been confirmed in Washington. One case occurred in 1985, two cases occurred in 1994, and four each in 1995 and 1996. Six of the 11 cases have been fatal. One person likely was exposed during travel outside the state, but eight appear to have contracted HPS in Eastern Washington and two in Western Washington. Nationally, 158 cases have been reported from 26 states through March 17, 1997; 47% of cases have been fatal.

The Sin Nombre virus (SNV), a hantavirus strain recognized in 1993, is responsible for most HPS cases in North America and all cases in western states. The primary reservoir for SNV is *Peromyscus maniculatus*, the deer mouse. Several hantaviral strains with different rodent reservoirs have been linked to cases in the East and Southeast.

Deer mice are found throughout Washington, especially in rural areas. Hantavirus-positive deer mice have been found in 10 of 13 counties where testing has occurred. The statewide prevalence is similar to the 12% prevalence in other western states.

Rabies

The two recent human rabies case in Washington are a compelling reminder that bats can transmit the virus to humans.

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Playground Injuries Focus of Pilot Surveillance System

Nationwide, two to five million children are injured at school each year. Despite the public health implications suggested by this figure, little is known about the magnitude of school-based injuries or the risks associated with potentially preventable hazards. One source of information — emergency room and hospital discharge data — may focus only on more severe injuries and may not provide adequate details.

Thus, with support from the Centers for Disease Control and Prevention, the Washington State Department of Health (DOH) conducted a pilot injury surveillance system at selected elementary schools from September 1993 to June 1996 to assess the feasibility of monitoring all school-based

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Zoonotic Diseases *(from page 1)*

For More Information

For information on the DOH Zoonotic Diseases Program and the upcoming workshops, contact John Grendon, D.V.M., at 360-586-5379 or via e-mail: jhg0303@hub.doh.wa.gov

Recommended Reading

Washington Public Health, Vol. 14, 1996:

Grendon JH, Goldoft MG: Discovery of hantavirus syndrome in Washington State, pp 9-10.

Bell TH: Public health repercussions of a child's death from bat rabies, pp 11-13.

Steingart KR, et al: An investigation of psittacosis: Local health district handles unusual case of infection in pet store employees, pp. 14-15.

Rabies-positive bats have been found in almost all Washington counties since first detected in 1961. Prior to 1995, laboratory testing found an average of five to 10 rabid bats annually (about 10% of those tested). Since the 1995 human case the number of bats submitted to the Department of Health laboratory has greatly increased. Similarly, inquiries from persons who come in contact with a bat, either in their home or elsewhere, have increased, especially in the region of the 1995 case. Another consequence is an increase in the number of persons treated for real or potential rabies exposure at a cost of about \$1,000 each.

The Department of Health has sponsored workshops on rabies prevention and control for local and state health officials, wildlife management professionals, local animal control officers, and veterinarians.

Exotic Pets

Reptiles including lizards (iguanas), snakes, and turtles have become popular pets and are widely available for sale in pet stores. In Washington and nationally, salmonellosis cases have been directly linked to reptile exposure. As many as 90% of reptiles may carry *Salmonella* asymptomatically and shed it in fecal material.

Pet stores also are selling species such as hedgehogs and prairie dogs. Human salmonellosis cases have been linked to hedgehogs. Prairie dogs in the southwestern

United States can be affected by plague. They are captured in the wild and then shipped to pet stores around the nation. The threat of plague transmission to prairie dog owners is unknown.

Only limited information regarding the potential of disease transmission is available for pet owners. The only current requirement of pet stores in Washington is to inform purchasers of psittacine birds (e.g., parrots, parakeets, and cockatiels) of the potential for transmission of psittacosis.

DOH will conduct two workshops on current regulations related to exotic pets and risks for zoonotic diseases. The dates are April 24 in Richland and May 22 in Tacoma. See the left column for contact information.

Cases of Salmonellosis Traced to Chicks and Baby Ducks

Health officials warn that diarrheal illness may be caused by contact with chicks and baby ducks. In 1995 and 1996, 14 cases of salmonellosis in Idaho, Oregon, and Washington were traced to contact with baby chicks. Several infants without direct exposure were probably infected by family members who handled chicks. Young children, persons with weakened immune systems, and the elderly and those who care for them, should limit contact with potentially infectious animals and should wash their hands carefully after exposure. (See *MMWR*, 46(11), March 21, 1997.)

TABLE: Guidelines for Reducing Risk of Zoonotic Diseases

Hantavirus

- Rodent-proof a home or business by plugging all openings of a 1/4" or larger with steel wool, foil, or screen.
- Remove food, animal food, or trash from around dwellings.
- Air out infested buildings for one hour before starting clean up of rodent droppings or dead rodents. Wear gloves, spray with 1:10 bleach/water solution, wipe clean without stirring up dust, place dead mice or contaminated materials in a plastic bag, and discard in garbage. Do not use a vacuum cleaner, which aerosolizes contaminated particles.

Rabies

- Avoid contact with all wild animals (especially bats) and stray dogs or cats.
- Vaccinate pet dogs and cats.
- Anyone bitten by or exposed to a bat or any wild animal should contact a doctor or the local health department.

Exotic Pets

- Wash hands after handling all pets, especially reptiles.
- Recognize that pet reptiles can be a risk for young children and immunosuppressed persons.
- Supervise young children around all pets, and insist on good handwashing.

Monthly Surveillance Data by County

March 1997* – Washington State Department of Health

County	E. coli O157:H7	Salmonella	Shigella	Hepatitis A	Hepatitis B	Non-A, Non-B Hepatitis	Meningococcal Disease	Pertussis	Tuberculosis	Chlamydia	Gonorrhea	AIDS	Pesticides†	Lead\$#
Adams	0	0	0	1	0	0	0	0	0	1	0	0	0	0/0
Asotin	0	0	0	0	0	0	0	0	0	2	0	0	0	0/0
Benton	0	0	0	1	0	0	1	1	0	19	0	1	0	1/16
Chelan	0	0	0	0	0	0	0	0	0	6	1	2	0	1/#
Clallam	0	0	0	0	0	0	0	0	0	6	2	0	0	0/0
Clark	0	2	0	0	0	0	0	0	2	37	3	4	0	0/0
Columbia	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Cowlitz	0	0	0	0	0	0	0	0	0	3	0	2	0	0/10
Douglas	0	0	0	2	0	0	0	0	1	0	0	0	0	0/0
Ferry	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Franklin	0	0	0	0	0	0	0	0	2	5	1	2	0	0/6
Garfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Grant	0	0	0	0	0	0	0	1	1	12	1	0	1	0/#
Grays Harbor	0	0	0	0	0	0	0	0	0	6	0	0	0	0/0
Island	0	0	0	0	0	0	0	2	1	3	0	1	0	0/#
Jefferson	0	0	0	0	0	0	0	0	0	2	0	0	0	0/#
King	2	3	6	20	3	0	1	13	8	244	53	32	3	0/73
Kitsap	1	3	1	7	0	0	0	0	2	26	4	1	0	1/28
Kittitas	0	0	0	0	0	0	0	0	0	8	0	0	0	0/#
Klickitat	1	0	0	1	0	0	0	1	0	1	0	0	0	0/0
Lewis	0	0	0	1	0	0	0	0	0	11	1	0	0	0/#
Lincoln	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Mason	0	0	0	1	0	0	0	1	0	2	0	0	0	0/0
Okanogan	2	0	0	0	1	0	0	0	0	1	1	1	0	0/0
Pacific	0	1	0	0	0	0	0	0	0	2	0	0	0	0/0
Pend Oreille	0	0	0	0	0	0	0	0	0	1	0	0	1	0/0
Pierce	0	2	2	5	1	0	1	11	1	111	46	9	1	0/135
San Juan	0	0	1	0	0	0	0	0	0	1	0	0	0	0/0
Skagit	0	1	0	1	0	0	0	2	0	10	0	0	0	0/#
Skamania	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Snohomish	0	2	1	2	0	3	1	3	1	52	13	5	0	3/12
Spokane	0	0	0	4	1	0	2	0	2	50	7	2	0	2/29
Stevens	0	0	0	0	0	0	0	0	0	5	0	1	0	0/0
Thurston	0	0	0	4	0	0	0	0	0	21	4	3	3	0/17
Wahkiakum	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Walla Walla	0	0	0	0	0	0	1	0	0	18	1	0	0	1/8
Whatcom	0	0	0	8	0	0	0	5	2	18	3	1	0	0/5
Whitman	0	0	0	0	0	0	0	0	0	8	0	0	0	0/#
Yakima	0	14	4	0	0	0	2	0	3	38	4	1	3	2/29
Unknown														0/1

Current Month	6	28	15	58	6	3	9	40	26	730	145	68	12	11/382
March 1996	0	68	20	34	5	9	14	17	21	778	190	120	18	8/164
1997 to date	8	92	31	138	14	6	26	75	68	2285	538	181	29	34/1030
1996 to date	4	121	46	128	20	23	29	27	59	2450	628	230	35	31/809

* Data are provisional based on reports received as of March 31, unless otherwise noted.

† Unconfirmed reports of illness associated with pesticide exposure.

\$# Number of elevated tests (data include unconfirmed reports) / total tests performed (not number of children tested); number of tests per county indicates county of health care provider, not county of residence for children tested; # means fewer than 5 tests performed, number omitted for confidentiality reasons.



WWW Access Tips

Information about rabies
can be found at:
[http://epsilon.doh.wa.gov:
80/epi/rabies/](http://epsilon.doh.wa.gov:80/epi/rabies/)

1997 Summer Institute for Public Health Practice

The 1997 Summer Institute sponsored by the Northwest Center for Public Health Practice at the University of Washington is scheduled for July 21 to August 1. More information is available on the center's Web page at: <http://weber.washington.edu/~nwcphp/dates/htm> or call 206-720-4250.

Playground Injuries *(from page 1)*

injuries and to estimate the magnitude of the problem at the participating schools. Fifteen nonurban elementary schools from five school districts in the state participated in the pilot system.

Local health jurisdiction personnel served as liaisons between participating schools and the DOH. School personnel, most often the school secretary, handled on-site reporting and used a simple, standard report form to provide detailed information about injuries. A broad case definition included "any injury occurring at school during regular school hours that required some form of treatment (e.g. applying an ice pack, cleaning and bandaging a wound, splinting a serious sprain, being sent home or to a hospital or clinic, calling 911)."

The preliminary results suggested a crude incidence rate of 17.3 injuries per 100 student-years (representing a total of 2686 reported injuries); 68% of the injuries occurred on the playground or playfield with 39% of these involving equipment. Falls were associated with 52% of the playground equipment injuries. Eighty-six (12%) of the 709 injuries associated with playground equipment resulted in hospitalization or physician treatment outside of school. The injury incidence rate was comparable for boys and girls through the 3rd grade. In the 4th and 5th grades, however, boys appeared more likely to have reported injuries (20 per 100 student-years) than did girls (14.7 per 100 student-years).

Important factors to consider in interpreting or extrapolating the results from this

project are that the participating schools were not randomly selected and the results thus are not necessarily representative of injury patterns in all elementary schools in Washington State. Also, differences at the schools in acceptance and ease of implementing the surveillance system apparently led to incomplete reporting, inconsistent application of the case definition, and other factors that affected data collection.

Nevertheless, this pilot project is providing new information that can be useful to schools, public health and safety specialists, and parent and community groups in better understanding the epidemiology of school-based injury and in developing school safety strategies. In addition, insights gained from this pilot surveillance system for injuries will provide a model for school-based monitoring of other health events.

For more information contact Richard E. Ellis, Office of Community and Environmental Health, 360-586-4490.

Frozen Strawberries the Cause of Hepatitis A Cases in Michigan

The Centers for Disease Control and Prevention announced an outbreak of hepatitis A associated with the consumption of frozen strawberries by Michigan school-children. Strawberries grown in Mexico and processed in California were shipped to several states as part of a federally sponsored school lunch program. No product was sent to Washington. About 310 cases of hepatitis have been identified in Michigan. Immune globulin is being given to students there as a prophylactic measure.

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epiTRENDS
P.O. Box 47812
Olympia, WA 98504-7812



epiTRENDS
is published monthly by
the Washington State
Department of Health.
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